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Serial No. 10/066,072

AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A system for the reduction of distortion in a wireless communication circuit having an RF combined signal including a desired signal and an out of band jammer signal, comprising:

a down mixer in a feedforward path configured to frequency convert at least a portion of the RF combined signal to substantially a baseband signal;

a filter in the feedforward path coupled to the down mixer and configured to remove the desired signal from the baseband signal and thereby provide a filtered signal representative of the jammer signal;

an up mixer in the feedforward path coupled to the filter and configured to frequency convert the filtered signal to an upconverted filtered signal at substantially an RF frequency of the jammer signal;

an adder circuit to receive the combined signal and the upconverted filtered signal from the feedforward path to thereby remove the jammer signal therefrom, wherein the adder circuit comprises a positive and negative input, the combined signal being coupled to the positive input and the upconverted filtered signal being coupled to the negative input; and

a signal mixer coupled to an output of the adder circuit.

2. (Canceled)

3. (Previously Presented) The system of claim 1, wherein the wireless communication circuit is a quadrature circuit and the down mixer is a quadrature mixer core, the filter comprising first and second filter portions to filter first and second quadrature components, respectively, and thereby generate first and second filtered signal portions, respectively, the up-mixer comprising first and second quadrature up-mixer portions to convert the first and second signal portions to substantially the frequency of the jammer signal, and a summer coupled to the first and second quadrature up-mixer portions to combine the converted first and second signal portions.

4-7. (Canceled)

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8. (Previously Presented) The system of claim 1 wherein the filter comprises a high-pass filter.

9. (Original) The system of claim 1 wherein the filter is an analog filter.

10. (Original) The system of claim 1 wherein the wireless communication unit has a specified operational bandwidth and the filter has a filter bandwidth based on the operational bandwidth.

11. (Currently Amended) A circuit for the reduction of distortion in a communication circuit having an RF combined signal including a desired signal and an out of band jammer signal, comprising:

means, in a feedforward path, for down converting at least a portion of the combined signal from RF to substantially a baseband combined signal;

means, in the feedforward path, for filtering the baseband combined signal to remove the desired signal and thereby provide a filtered signal representative of the jammer signal;

means, in the feedforward path, for up converting the filtered signal to an upconverted filtered signal at substantially a radio frequency of the jammer signal;

means for adding the combined signal and the upconverted filtered signal from the feedforward path to remove the jammer signal therefrom and thereby generate a signal with reduced jammer signal, wherein the means for adding comprises coupling the combined signal to a positive input of an adder and coupling the filtered signal to a negative input of the adder; and

means, coupled to an output of the adder circuit, for mixing the signal with reduced jammer signal.

12. (Canceled)

13. (Previously Presented) The circuit of claim 11, wherein the communication circuit is a quadrature circuit and the means for down converting comprises a quadrature mixer core that generates first and second quadrature components,

wherein the means for filtering comprises means for filtering the first and second quadrature components to thereby generate first and second filtered signal

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portions, respectively, and the means for up converting comprising means for converting the first and second filtered signal portions to substantially the frequency of the jammer signal, the circuit further comprising means for combining the converted first and second signal portions.

14. (Currently Amended) A circuit for the reduction of distortion in a receiver configured to receive a radio frequency (RF) signal at a selected RF, the received RF signal being a combined signal containing a desired signal and an out of band jammer signal and a down-converter configured to convert the received RF signal to a selected lower frequency, the circuit comprising:

means, in a feedforward path, for filtering the combined signal at the selected lower frequency to remove the desired signal and retain at least the out of band jammer signal in a filtered signal;

means, in the feedforward path, for converting the filtered signal to the selected RF;

means for adding the received RF signal and the filtered RF signal from the feedforward path to remove the jammer signal to generate an RF signal with reduced jammer signal; and

means, distinct from the downconverter, for frequency converting the RF signal with reduced jammer signal.

15. (Canceled)

16. (Canceled)

17. (Previously Presented) The circuit of claim 14 wherein the means for filtering comprises a highpass filter operating at baseband.

18. (Original) The circuit of claim 14 wherein the means for filtering comprises an analog filter.

19. (Original) The circuit of claim 14 wherein the receiver has a specified operational bandwidth and the means for filtering uses a filter bandwidth based on the operational bandwidth.

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20. (Currently Amended) A method for the reduction of distortion in a wireless communication circuit having a combined signal including a desired signal and a jammer signal, the method comprising:

downconverting, in a feedforward path, at least a portion of the combined signal to substantially a combined ~~baseband~~ lower frequency signal;

filtering, in the feedforward path, the combined ~~baseband~~ lower frequency signal to remove the desired signal and thereby provide a filtered signal representative of the jammer signal;

upconverting, in the feedforward path, the filtered signal to an upconverted filtered signal at substantially a frequency of the jammer signal;

adding the combined signal and the upconverted filtered signal, from the feedforward path, to remove the jammer signal therefrom to produce a jammer canceled signal, wherein adding comprises coupling the combined signal to a positive input of an adder and coupling the filtered signal to a negative input of the adder; and downconverting the jammer canceled signal to generate a reduced distortion signal.

21. (Canceled)

22. (Previously Presented) The method of claim 20, further comprising:

receiving a radio frequency (RF) signal at a selected RF, the received RF signal containing the desired signal and the jammer signal.

23. (Previously Presented) The method of claim 22 wherein the wireless communication circuit is a quadrature circuit and downconverting at least a portion of the combined signal comprises converting the received RF signal to first and second quadrature components at substantially baseband frequencies, filtering comprises filtering the first and second quadrature components, respectively, to thereby generate first and second filtered signal portions, respectively, and upconverting comprises converting the first and second filtered signal portions to the selected RF, the method further comprising combining the converted first and second filtered signal portions.

24. (Original) The method of claim 23, further comprising:

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splitting the combined converted filtered signal portions into two signals for quadrature processing wherein the adding comprises adding a first of the two split signals and the combined signal and adding a second of the two split signals and the combined signal.

25. (Canceled)

26. (Previously Presented) The method of claim 20 wherein the filtering is highpass filtering operating at baseband.

27. (Original) The method of claim 20 wherein the filtering is performed by an analog filter.

28. (Original) The method of claim 20 wherein the wireless communication circuit has a specified operational bandwidth and filtering uses a filter bandwidth based on the operational bandwidth.

29. (Canceled)

30. (Canceled)

31. (Previously Presented) A system for the reduction of distortion in a wireless communication circuit having a combined signal including a desired signal and a jammer signal, comprising:

a radio frequency (RF) stage having an input configured to receive an RF signal and an output;

a four-way splitter having an input and first, second, third and fourth outputs, the four-way splitter input coupled to the RF stage output;

an adder comprising first and second adder portions, each adder portion having first and second inputs and an output, the outputs from the first and second adder portions providing reduced distortion output RF signals, the second inputs of the first and second adder portions being coupled to the third and fourth four-way splitter outputs, respectively;

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a mixer comprising first and second mixer cores, each mixer core having an input, an output and an oscillator input, the first and second mixer inputs coupled to the first and second four-way splitter outputs, respectively;

a filter comprising first and second filter portions, each filter portion having an input and an output, the first and second filter inputs being coupled to the mixer first and second mixer outputs, respectively;

an up-mixer comprising first and second up-mixer portions, each up-mixer portion having an input, an output and an oscillator input, the first and second filter up-mixer inputs coupled to the first and second filter outputs, respectively;

a summer having first and second inputs and an output, the first and second inputs coupled to the first and second up-mixer outputs, respectively;

a two-way splitter having an input and first and second outputs, the input coupled to the summer output, the first and second two-way splitter outputs coupled to the first inputs of the first and second adder portions, respectively.

32. (Canceled)

33. (Previously Presented) The circuit of claim 31 wherein the four-way splitter generates an output signal at the first and second outputs related to a gain factor and the signal at the four-way splitter input.

34. (Previously Presented) The circuit of claim 33 wherein the four-way splitter generates an output signal at the third and fourth outputs inversely related to the gain factor and the signal at the four-way splitter input.

35. (New) The circuit of claim 14, wherein the lower frequency comprises an intermediate frequency (IF).

36. (New) The circuit of claim 14 wherein the means for filtering comprises an intermediate frequency (IF) bandpass filter.

37. (New) The circuit of claim 14, wherein the means for frequency converting the RF signal with reduced jammer signal comprises means for frequency converting the RF signal with reduced jammer signal to substantially a baseband signal.

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38. (New) The method of claim 20, wherein the lower frequency comprises an intermediate frequency (IF).

39. (New) The method of claim 20, wherein filtering the combined lower frequency signal comprises separately filtering in-phase (I) and quadrature (Q) signal components of the combined lower frequency signal.